WHAT IS CLAIMED IS:

1. A color image forming apparatus comprising:

an electrostatic charger;

an image carrier that is charged by the electrostatic charger;

an exposing unit that irradiates a light to the image carrier to form a latent image on the image carrier;

a developing unit that develops the latent image with toner of a specific color to form a toner image of the specific color;

a transfer belt that moves at a specific moving speed to feed the recording medium to the developing unit so that the toner image is transferred to the recording medium;

a pattern forming unit that forms a mark pattern including a first mark and a second mark on the transfer belt using toner;

a first sensor that detects the first mark and the second mark while the transfer belt is moving;

an acquiring unit that acquires a current interval between the first mark and the second mark and calculates an interval difference between the current interval and a predetermined reference interval;

a speed detector that detects a first moving speed that is a moving speed of the transfer belt during a period of time from formation of the mark pattern to detection of the mark pattern, and a second moving speed that is a moving speed of the transfer belt while transferring the toner image to the recording medium;

a calculating unit that calculates a speed difference between the first moving speed and the second moving speed; and

a control unit that controls image formation based on the interval difference and the speed difference.

2. The color image forming apparatus according to claim 1, wherein

the transfer belt has a speed mark pattern including a first speed mark and a second speed mark at a predetermined interval,

the color image forming apparatus further comprises a second sensor that detects the first speed mark and the second speed mark while the transfer belt is moving and measures a time difference from the detection of the first speed mark until the detection of the second speed mark, and

the speed detector detects the first moving speed and the second moving speed based on the interval between the first speed mark and the second speed mark and the time measured by the second sensor.

3. The color image forming apparatus according to claim 1, wherein the control unit controls a timing of forming the latent image on the image carrier based on the interval difference and the speed difference.

4. The color image forming apparatus according to claim 2, wherein

the transfer belt includes a first surface and a second surface,

and

the recording medium is carried on the first surface and the speed mark pattern is formed on the second surface.

5. The color image forming apparatus according to claim 4, wherein the speed mark pattern includes a repetition of line marks at a specific interval on one edge of the second surface.

6. The color image forming apparatus according to claim 1, further comprising a driving unit that drives the transfer belt, wherein

the driving unit has a rotating part, and

the speed detector detects the first moving speed and the second moving speed based on a rotational speed of the rotating part.

7. The color image forming apparatus according to claim 1, wherein the control unit controls the moving speed of the transfer belt based on the interval difference and the speed difference.

8. The color image forming apparatus according to claim 1, wherein

the mark pattern includes a group of straight line marks that are perpendicular to an edge of the transfer belt and a group of inclined line marks that are inclined to the edge, and

the group of straight line marks includes straight lines formed in magenta, cyan, yellow, and black, and the group of inclined line marks

includes straight lines formed in magenta, cyan, yellow, and black.

9. A tandem type color image forming apparatus comprising:

a plurality of electrostatic chargers;

a plurality of image carriers each of which is charged by a corresponding one of the electrostatic chargers;

a plurality of exposing units each of which irradiates a light to a corresponding one of the image carriers to form a latent image on each of the image carriers;

a plurality of developing units each of which develops the latent image on a corresponding one of the image carriers with toner of a specific color to form a toner image of the specific color;

a transfer belt that moves at a specific moving speed to feed a recording medium to the developing unit so that the toner images are transferred to the recording medium;

a pattern forming unit that forms a mark pattern including a first mark and a second mark on the transfer belt using toner;

a first sensor that detects the first mark and the second mark while the transfer belt is moving;

an acquiring unit that acquires a current interval between the first mark and the second mark and calculates an interval difference between the current interval and a predetermined reference interval;

a speed detector that detects a first moving speed that is a moving speed of the transfer belt during a period of time from formation of the mark pattern to detection of the mark pattern, and a second

moving speed that is a moving speed of the transfer belt while transferring the toner image to the recording medium;

a calculating unit that calculates a speed difference between first moving speed and second moving speed; and

a control unit that controls image formation based on the interval difference and the speed difference.

10. The tandem type color image forming apparatus according to claim 9, wherein

the transfer belt has a speed mark pattern including a first speed mark and a second speed mark at a predetermined interval,

the color image forming apparatus further comprises a second sensor that detects the first speed mark and the second speed mark while the transfer belt is moving and measures a time difference from the detection of the first speed mark until the detection of the second speed mark, and

the speed detector detects the first moving speed and the second moving speed based on the interval between the first speed mark and the second speed mark and the time measured by the second sensor.

11. The tandem type color image forming apparatus according to claim 9, wherein the control unit controls a timing of forming the latent image on each of the image carriers based on the interval difference and the speed difference.

12. The tandem type color image forming apparatus according to claim 10, wherein

the transfer belt includes a first surface and a second surface, and

the recording medium is carried on the first surface and the speed mark pattern is formed on the second surface.

13. The tandem type color image forming apparatus according to claim 9, further comprising a driving unit that drives the transfer belt, wherein

the driving unit has a rotating part, and

the speed detector detects the moving speed of the transfer belt based on a rotational speed of the rotating part.

14. The tandem type color image forming apparatus according to claim 9, wherein the control unit controls the moving speed of the transfer belt based on the interval difference and the speed difference.

15. A process cartridge that is detachably mounted to a color image forming apparatus, the color image forming apparatus comprising:

an electrostatic charger;

an image carrier that is charged by the electrostatic charger;

an exposing unit that irradiates a light to the image carrier to form a latent image on the image carrier;

a developing unit that develops the latent image with toner of a

specific color to form a toner image of the specific color;

a transfer belt that has a speed mark previously formed, and moves at a specific moving speed to feed the recording medium to the developing unit so that the toner images are transferred to the recording medium;

a cleaning unit that cleans the image carrier;

a pattern forming unit that forms a mark pattern including a first mark and a second mark on the transfer belt using toner;

a first sensor that detects the first mark and the second mark while the transfer belt is moving;

an acquiring unit that acquires a current interval between the first mark and the second mark and calculates an interval difference between the current interval and a predetermined reference interval;

a second sensor that detects the speed mark pattern on the transfer belt;

a speed detector that detects a first moving speed that is a moving speed of the transfer belt during a period of time from formation of the mark pattern to detection of the mark pattern, and a second moving speed that is a moving speed of the transfer belt while transferring the toner image to the recording medium;

a calculating unit that calculates a speed difference between the first moving speed and the second moving speed; and

a control unit that controls a timing of forming the latent image on the image carrier based on the interval difference and the speed difference, wherein

the process cartridge being a combination of the image carrier with at least one from among the electrostatic charger, the developing unit, and the cleaning unit, wherein an image is formed on a region of the image carrier that is out of overlapping with the mark pattern previously formed on the transfer belt.

16. The process cartridge according to claim 15, further comprising a driving unit that drives the transfer belt, wherein

the driving unit has a rotating part, and

the speed detector detects the first moving speed and the second moving speed based on a rotational speed of the rotating part.

17. The color image forming apparatus according to claim 15, wherein the control unit controls the moving speed of the transfer belt based on the interval difference and the speed difference.

18. The process cartridge according to claim 15, wherein

the transfer belt includes a first surface and a second surface, and

the recording medium is carried on the first surface and the speed mark pattern is formed on the second surface.

19. The process cartridge according to claim 15, wherein

the speed mark pattern is formed on one edge of the transfer belt, and

the process cartridge passes over other edge of the transfer belt when the process cartridge is attached to or detached from the color image forming apparatus.